

National Health and Nutrition Examination Survey 2003-2004

Documentation, Codebook, and Frequencies

**MEC Laboratory Component:
Complete Blood Count with 5-part
Differential**

**Survey Years:
2003 to 2004**

**SAS Export File:
L25_C.XPT**



January 2006

NHANES 2003–2004 Data Documentation

Laboratory Assessment: Lab 25 - Complete Blood Count with 5-Part Differential (not Glucose) in Whole Blood

Years of Coverage: 2003–2004

First Published: January 2006

Last Revised: N/A

Component Description

The objectives of this component are to:

- 1) Provide data for monitoring secular trends in measures of nutritional status in the U.S. population;
- 2) Evaluate the effect of people's habits and behaviors such as physical activity and the use of alcohol, tobacco, and dietary supplements on people's nutritional status; and
- 3) Evaluate the effect of changes in nutrition and public health policies - including welfare reform legislation, food fortification policy, and child nutrition programs - on the nutritional status of the U.S. population.

These data will be used to estimate deficiencies and toxicities of specific nutrients in the population and subgroups, to provide population reference data, and to estimate the contribution of diet, supplements, and other factors to serum levels of nutrients. Data will be used for research to further define nutrient requirements as well as optimal levels for disease prevention and health promotion.

Eligible Sample

Participants aged 1 year and over were tested.

Description of Laboratory Methodology

The methods used to derive CBC parameters are based on the Beckman Coulter method of counting and sizing, in combination with an automatic diluting and mixing device for sample processing, and a single beam photometer for hemoglobinometry. The WBC differential uses VCS technology. See Chapter 7 of the NHANES Laboratory/Medical Technologists Procedures Manual (LPM) for details.

The Beckman Coulter MAXM instrument in the Mobile Examination Centers (MECs) produces a complete blood count on blood specimens and provides a distribution of blood cells for all participants.

There were no changes to the equipment, lab methods, or lab site from the previous 2 years.

A detailed description of the laboratory method used can be found on the NHANES website.

Laboratory Quality Control and Monitoring

The NHANES quality control and quality assurance protocols (QA/QC) meet the 1988 Clinical Laboratory Improvement Act mandates. Detailed quality control and quality assurance instructions are discussed in the NHANES LPM. Read the LABDOC file for detailed QA/QC protocols.

A detailed description of the quality assurance and quality control procedures can be found on the NHANES website.

Data Processing and Editing

Blood specimens were measured at the NHANES MECs. Detailed specimen collection and processing instructions are discussed in the NHANES LPM. Read the LABDOC file for detailed data processing and editing protocols. The analytical methods are described in the **Description of the Laboratory Methodology** section.

This file contains no top coding. Click on the Freqs link for lab25 to determine any below-detection limit fill values.

Five derived variables were created in this data file. The formula for their derivation is as follows:

$LBDLYMNO = LBXWBCSI * LBXLYPCT$ (round to 1 decimal)

$LBDMONO = LBXWBCSI * LBXMOPCT$ (round to 1 decimal)

$LBDNENO = LBXWBCSI * LBXNEPCT$ (round to 1 decimal)

$LBDEONO = LBXWBCSI * LBXEOPCT$ (round to 1 decimal)

$LBDBANO = LBXWBCSI * LBXBAPCT$ (round to 1 decimal)

Detailed instructions on specimen collection and processing can be found on the NHANES website.

Analytic Notes

The analysis of NHANES 2001–2002 laboratory data must be conducted with the key survey design and basic demographic variables. The NHANES 2001–2002 Household Questionnaire Data Files contain demographic data, health indicators, and other related information collected during household interviews. They also contain all survey design variables and sample weights for these age groups. The phlebotomy file includes auxiliary information such as the conditions

precluding venipuncture. The household questionnaire and phlebotomy files may be linked to the laboratory data file using the unique survey participant identifier SEQN.

References N/A

Locator Fields

Title: Complete Blood Count with 5-Part Differential

Contact Number: 1-866-441-NCHS

Years of Content: 2003–2004

First Published: January 2006

Revised: N/A

Access Constraints: None

Use Constraints: None

Geographic Coverage: National

Subject: Complete Blood Count with 5-Part Differential

Record Source: NHANES 2003–2004

Survey Methodology: NHANES 2003–2004 is a stratified multistage probability sample of the civilian non-institutionalized population of the U.S.

Medium: NHANES Web site; SAS transport files

**National Health and Nutrition Examination Survey
Codebook for Data Production (2003-2004)**

**Complete Blood Count with 5-part Differential
(L25_C)
Person Level Data**

January 2006



SEQN	Target
	B(1 Yrs. to 150 Yrs.)
Hard Edits	SAS Label
	Respondent sequence number
English Text: Respondent sequence number.	
English Instructions:	

LBXWBCSI	Target		
	B(1 Yrs. to 150 Yrs.)		
Hard Edits	SAS Label		
	White blood cell count (1000 cells/uL)		
English Text: White blood cell count (1000 cells/uL)			
English Instructions:			
Code or Value	Description	Count	Skip to Item
2.3 to 99.99	Range of Values	8384	
.	Missing	795	

LBXLYPCT	Target		
	B(1 Yrs. to 150 Yrs.)		
Hard Edits	SAS Label		
	Lymphocyte percent (%)		
English Text: Lymphocyte percent (%)			
English Instructions:			
Code or Value	Description	Count	Skip to Item
5 to 89.7	Range of Values	8353	
.	Missing	826	

LBXMOPCT	Target		
	B(1 Yrs. to 150 Yrs.)		
Hard Edits	SAS Label		
	Monocyte percent (%)		
English Text: Monocyte percent (%)			
English Instructions:			
Code or Value	Description	Count	Skip to Item
0.9 to 33.4	Range of Values	8353	
.	Missing	826	

LBXNEPCT	Target		
	B(1 Yrs. to 150 Yrs.)		
Hard Edits	SAS Label		
	Segmented neutrophils percent (%)		
English Text: Segmented neutrophils percent (%)			
English Instructions:			
Code or Value	Description	Count	Skip to Item
2.4 to 92.3	Range of Values	8353	
.	Missing	826	

LBXEOPCT	Target		
	B(1 Yrs. to 150 Yrs.)		
Hard Edits	SAS Label		
	Eosinophils percent (%)		
English Text: Eosinophils percent (%)			
English Instructions:			
Code or Value	Description	Count	Skip to Item
0 to 27.7	Range of Values	8353	
.	Missing	826	

LBXBAPCT	Target		
	B(1 Yrs. to 150 Yrs.)		
Hard Edits	SAS Label		
	Basophils percent (%)		
English Text: Basophils percent (%)			
English Instructions:			
Code or Value	Description	Count	Skip to Item
0 to 17.3	Range of Values	8353	
.	Missing	826	

LBDLYMNO	Target		
	B(1 Yrs. to 150 Yrs.)		
Hard Edits	SAS Label		
	Lymphocyte number		
English Text: Lymphocyte number			
English Instructions:			
Code or Value	Description	Count	Skip to Item
0.4 to 89.7	Range of Values	8353	
.	Missing	826	

LBDMONO	Target		
	B(1 Yrs. to 150 Yrs.)		
Hard Edits	SAS Label		
	Monocyte number		
English Text: Monocyte number			
English Instructions:			
Code or Value	Description	Count	Skip to Item
0.1 to 4.4	Range of Values	8353	
.	Missing	826	

LBDNENO	Target		
	B(1 Yrs. to 150 Yrs.)		
Hard Edits	SAS Label		
	Segmented neutrophils number		
English Text: Segmented neutrophils number			
English Instructions:			
Code or Value	Description	Count	Skip to Item
0.2 to 18.1	Range of Values	8353	
.	Missing	826	

LBDEONO	Target		
	B(1 Yrs. to 150 Yrs.)		
Hard Edits	SAS Label		
	Eosinophils number		
English Text: Eosinophils number			
English Instructions:			
Code or Value	Description	Count	Skip to Item
0 to 2.4	Range of Values	8353	
.	Missing	826	

LBDBANO	Target		
	B(1 Yrs. to 150 Yrs.)		
Hard Edits	SAS Label		
	Basophils number		
English Text: Basophils number			
English Instructions:			
Code or Value	Description	Count	Skip to Item
0 to 1.1	Range of Values	8353	
.	Missing	826	

LBXRBCSI	Target		
	B(1 Yrs. to 150 Yrs.)		
Hard Edits	SAS Label		
	Red blood cell count (million cells/uL)		
English Text: Red cell count SI			
English Instructions:			
Code or Value	Description	Count	Skip to Item
2.61 to 7.03	Range of Values	8384	
.	Missing	795	

LBXHGB	Target		
	B(1 Yrs. to 150 Yrs.)		
Hard Edits	SAS Label		
	Hemoglobin (g/dL)		
English Text: Hemoglobin (g/dL)			
English Instructions:			
Code or Value	Description	Count	Skip to Item
6.2 to 19.2	Range of Values	8384	
.	Missing	795	

LBXHCT	Target		
	B(1 Yrs. to 150 Yrs.)		
Hard Edits	SAS Label		
	Hematocrit (%)		
English Text: Hematocrit (%)			
English Instructions:			
Code or Value	Description	Count	Skip to Item
21.7 to 57.1	Range of Values	8384	
.	Missing	795	

LBXMCVSI	Target		
	B(1 Yrs. to 150 Yrs.)		
Hard Edits	SAS Label		
	Mean cell volume (fL)		
English Text: Mean cell volume (fL)			
English Instructions:			
Code or Value	Description	Count	Skip to Item
58.3 to 117.3	Range of Values	8384	
.	Missing	795	

LBXMCHSI	Target		
	B(1 Yrs. to 150 Yrs.)		
Hard Edits	SAS Label		
	Mean cell hemoglobin (pg)		
English Text: Mean cell hemoglobin (pg)			
English Instructions:			
Code or Value	Description	Count	Skip to Item
17.5 to 40.4	Range of Values	8384	
.	Missing	795	

LBXMC	Target		
	B(1 Yrs. to 150 Yrs.)		
Hard Edits	SAS Label		
	MCHC (g/dL)		
English Text: Mean cell hemoglobin concentration (g/dL)			
English Instructions:			
Code or Value	Description	Count	Skip to Item
28.7 to 42.2	Range of Values	8384	
.	Missing	795	

LBXRDW	Target		
	B(1 Yrs. to 150 Yrs.)		
Hard Edits	SAS Label		
	Red cell distribution width (%)		
English Text: Red cell distribution width (%)			
English Instructions:			
Code or Value	Description	Count	Skip to Item
10.6 to 26.9	Range of Values	8384	
.	Missing	795	

LBXPLTSI	Target		
	B(1 Yrs. to 150 Yrs.)		
Hard Edits	SAS Label		
	Platelet count SI (1000 cells/uL)		
English Text: Platelet count (%) SI			
English Instructions:			
Code or Value	Description	Count	Skip to Item
35 to 999.9	Range of Values	8384	
.	Missing	795	

LBXMPSI	Target		
	B(1 Yrs. to 150 Yrs.)		
Hard Edits	SAS Label		
	Mean platelet volume (fL)		
English Text: Mean platelet volume (fL)			
English Instructions:			
Code or Value	Description	Count	Skip to Item
5.5 to 13.5	Range of Values	8384	
.	Missing	795	